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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/926,447 | 10/21/2002 | Thomas Grassl | GRAS3004/JEK | 4692 |

23364 7590 08/25/2004

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| EXAMINER | |
|---|---|
| HAWKINS, CHERYL N | |
| **ART UNIT** | **PAPER NUMBER** |
| 1734 | |

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/926,447 | GRASSL ET AL. | |
| | Examiner | Art Unit | |
| | Cheryl N Hawkins | 1734 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-32 is/are pending in the application.

4a) Of the above claim(s) 1-17 and 23-26 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 18-22 and 27-32 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 21 October 2002 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1, 8-17, and 23, drawn to a method of handling thinned chips.

Group II, claim(s) 2, 4-9, and 24-26, drawn to a method of handling thinned chips.

Group III, claim(s) 3, and 4-7, drawn to a method of handling thinned chips.

Group IV, claim(s) 18-22 and 27-32, drawn to a method for incorporating a thinned chip into a smart card and the product resulting from that method.

2. The inventions listed as Groups I, II, III, and IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of Group 1 is handling thinned chips which are removed from a carrier substrate without any support structure, the special technical feature of Group II is handling thinned chips which are removed from a carrier substrate using a single unified support structure, the special technical feature of Group III is handling thinned chips which are removed from a carrier substrate with a divided support structure, and the special technical feature of Group IV is incorporating thinned chips into smart cards and the product resulting from that method.

3. During a telephone conversation with Attorney J. Ernest Kenney on August 18, 2004 a provisional election was made without traverse to prosecute the invention of Group IV, claims 18-22 and 27-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-17 and 23-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Specification***

5. The disclosure is objected to because of the following informalities: "Figs. 10/11" in line 4, page 5 of the specification should be marked --Figs. 10a, 10b, 11a, and 11b-- and "Figs. 12/13" in line 6, page 5 of the specification should be marked --Figs. 12a-12c and Figs. 13a-13c--.

Appropriate correction is required.

6. The disclosure is objected to because of the following informalities: the references to specific claim numbers in lines 1, 9, 15, and 24 on page 2 of the specification and line 10 on page 3 of the specification should be removed because cancellation and renumbering of the claims may make these descriptions inaccurate.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 18, 19, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohama et al. (US 6,412,701) in view Miyamoto et al. (US 6,342,434). As to Claim 18, Kohama et al. discloses a method for incorporating a chip (Figures 8 and 9, chip 1) into a smart card (Figures 8 and 9, flexible substrate 3), comprising applying the chip to a surface of the smart card externally. Kohama et al. does not disclose the chip as being thinned. Miyamoto et al. discloses a method of incorporating a chip into a smart card in which the chip is thinned so that the smart card can be made thinner than a conventional smart card thereby decreasing the material costs for producing the smart card (column 5, lines 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Kohama et al. to include thinning the chip as suggested by Miyamoto et al. to produce a thinner smart card with decreased material costs.

As to Claim 19, the references as combined (see Kohama et al.) disclose a method which includes applying the chip (Figures 8 and 9, chip 1) with its front side pointing outside to the surface of the smart card and wherein the card and the chip are provided with conductive paths (Figures 8 and 9, coil 2).

As to Claim 27, Kohama et al. discloses a smart card (Figures 8 and 9, flexible substrate 3) comprising a smart card having a chip (Figures 8 and 9, chip 1) disposed on the surface of the smart

card. Kohama et al. does not disclose the chip as being thinned. Miyamoto et al. discloses that chips contained in smart cards are thinned so that the smart cards can be made thinner than conventional smart cards thereby decreasing the material costs for producing the smart card (column 5, lines 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the chip disclosed by Kohama et al. to be thinned as suggested by Miyamoto et al. to enable one to produce a thinner smart card with decreased material costs.

As to Claim 28, the references as combined (see Kohama et al.) disclose a smart card (Figures 8 and 9, flexible substrate 3) in which the chip (Figures 8 and 9, chip 1) is disposed with its front side outside on the surface of the smart card and conductive paths (Figures 8 and 9, coil 2) are applied to the smart card and the chip on the outside.

As to Claim 29, the references as combined (see Kohama et al.) disclose a smart card in which the conductive paths are printed (column 3, lines 40-43; column 21, lines 37-39).

9. Claims 18, 20, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fehrman et al. (US 6,193,163) in view of Miyamoto et al. (US 6,342,434). As to Claim 18, Fehrman et al. discloses a method for incorporating a chip (Figure 1, semiconductor chip assembly 14) into a smart card (Figure 1, smart card body 12), comprising applying the chip to a surface of the smart card externally. Fehrman et al. does not disclose the chip as being thinned. Miyamoto et al. discloses a method of incorporating a chip into a smart card in which the chip is thinned so that the smart card can be made thinner than a conventional smart card thereby decreasing the material costs for producing the smart card (column 5, lines 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Fehrman et

al. to include thinning the chip as suggested by Miyamoto et al. to produce a thinner smart card with decreased material costs.

As to Claim 20, the references as combined (see Fehrman et al.) disclose a method which includes incorporating the chip into a cavity in the surface of the smart card (see Figure 1).

As to Claim 27, Fehrman et al. discloses a smart card (Figure 1, smart card body 12) comprising a chip (Figure 1, semiconductor chip assembly 14) disposed on a surface of the smart card. Fehrman et al. does not disclose the chip as being thinned. Miyamoto et al. discloses a chip which is thinned so that the smart card can be made thinner than a conventional smart card thereby decreasing materials costs for producing the smart card (column 5, lines 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the chip disclosed by Fehrman et al. to be thinned as suggested by Miyamoto et al. to produce a thinner smart card with decreased material costs.

As to Claim 30, the references as combined (see Fehrman et al.) disclose a smart card in which includes the chip is disposed in a cavity in the surface of the smart card (see Figure 1).

10. Claims 18, 21, 27, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Provost (FR 2780534) in view of Miyamoto et al. (US 6,342,434). As to Claim 18, Provost discloses a method for incorporating a chip into a smart card, comprising applying the chip to a surface of the smart card externally (abstract). Provost does not disclose the chip as being thinned. Miyamoto et al. discloses a method of incorporating a chip into a smart card in which the chip is thinned so that the smart card can be made thinner than a conventional smart card thereby decreasing material costs for producing the smart card (column 5, lines 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method

disclosed by Provost to include thinning the chip as suggested by Miyamoto et al. to produce a thinner smart card with decreased material costs.

As to Claim 21, the references as combined (see Provost) disclose a method which includes pressing the chip into the surface of the smart card flush under the action of heat (abstract).

As to Claim 27, Provost discloses a smart card comprising a smart card having a chip disposed on a surface of the smart card (abstract). Provost does not disclose the chip as being thinned. Miyamoto et al. discloses a chip disposed into a smart card in which the chip is thinned so that the smart card can be made thinner than a conventional smart card thereby decreasing material costs for producing the smart card (column 5, lines 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the chip disclosed by Provost to be thinned as suggested by Miyamoto et al. to produce a thinner smart card with decreased material costs.

As to Claim 31, the references as combined (see Provost) disclose a smart card in which the chip is pressed into the surface of the smart card flush (abstract).

11. Claims 22 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohama et al. (US 6,412,701) or Fehrman et al. (US 6,193,163) or Provost (FR 2780534) and Miyamoto et al. (US 6,342,434) as applied to claim 18 or 27 above, and further in view of Bohm et al. (US 4,835,427). As to Claim 22, the references as combined do not disclose coating the chip located on the surface of the smart card with a protective lacquer. It is well known and conventional in the electronic arts, as disclosed by Bohm et al. (column 2, lines 18-23), to provide chips with a lacquer coating to protect the chip and its connections against mechanical damage or aggressive environmental influences. It would have been obvious to one of ordinary skill in the art at the time

of the invention to modify the method of the references as combined to include coating the chip with a lacquer as suggested by Bohm et al. to protect the chip and its connections against mechanical damage or aggressive environmental influences.

As to Claim 32, the references as combined do not disclose a smart card in which the chip is coated with a protective lacquer. It is well known and conventional in the electronic arts, as disclosed by Bohm et al. (column 2, lines 18-23), to provide chips with a lacquer coating to protect the chip and its connections against mechanical damage or aggressive environmental influences. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the chip of the references as combined to include a lacquer coating as suggested by Bohm et al. to protect the chip and its connections against mechanical damage or aggressive environmental influences.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl N Hawkins whose telephone number is (571) 272-1229. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher A Fiorilla can be reached on (517) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheryl N. Hawkins

Cheryl N. Hawkins

August 20, 2004

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